

APPENDIX A- ITS TERMS

ACTIVITY CENTERS

- “Static” event locations that generate traffic (i.e., motor vehicle, pedestrian, transit, etc.)
- Examples include shopping malls, recreational/tourist attractions, National Parks, sporting facilities, etc.

APC – AUTOMATIC PASSENGER COUNTING

- System that automatically counts the number of passengers that board a vehicle
- Typically used in transit/rail applications

APCD – AIR POLLUTION CONTROL DISTRICT

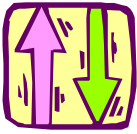
- Agency that measures, monitors, and regulates air quality and pollutant emissions in a defined geographical area, usually a City and/or County area

AQMD – AIR QUALITY MANAGEMENT DISTRICT

- Agency that measures, monitors, and regulates air quality and pollutant emissions in a defined geographical area, usually a multi-County and/or Regional area

AVL – AUTOMATED VEHICLE LOCATION

- System that automatically monitors/tracks a vehicle’s location
- Typically used by public Agencies (e.g., transit, DOT, DPW, law enforcement, etc.) and private sector firms (e.g., taxis, tow trucks, EMS, CVO, etc.) for fleet management
- Types of technology include GPS, beacon systems (e.g., inductive loop, infrared, radar, etc.), dead-reckoning systems, etc.



CA – CALIFORNIA

CAD – COMPUTER-AIDED DISPATCH

- Computer system program/software that enhances radio communications between the dispatcher and vehicle operator
- Usually involves the use of dedicated radio frequencies/channels
- Typically combined with fleet management systems, GIS, schedule adherence software, etc.

CALL BOXES

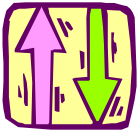
- Dedicated roadside telephones that transmit motorist distress messages to a central facility/"help" center
- Calls are usually directed to a CHP or local law enforcement facility

CALTRANS D5 – CALIFORNIA DEPARTMENT OF TRANSPORTATION DISTRICT 5

- Responsible for system management and operations for incident response, planned lane closures, and special events on the State highway system
- Role also includes planning, designing, construction, operating, and maintaining the State highway system

CCTV – CLOSED CIRCUIT TELEVISION

- Video cameras positioned along the roadway network at strategic locations dedicated to surveillance/monitoring activities that assist transportation, incident, and emergency management efforts
- Images (e.g., real-time, slow-scan, etc.) are usually transmitted to a management facility where operators can view the images and control camera functionality



CHP – CALIFORNIA HIGHWAY PATROL

- Responsible for State highway incident management, emergency road closures, law enforcement, traffic supervision, and providing motorist safety services
- Role also includes assisting local and allied law enforcement and maximizing highway safety

CITY/COUNTY LAW ENFORCEMENT AGENCIES

- Term used to describe the local public Agencies responsible for law enforcement (i.e., police and sheriff departments)

CITY/COUNTY PLANNING DEPARTMENT

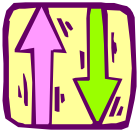
- Term used to describe the local public Agencies responsible for planning transportation-related projects/improvements

CITY/COUNTY TRAFFIC ENGINEERING DEPT.

- Term used to describe the local public Agencies responsible for traffic management operations

CMS – CHANGEABLE MESSAGE SIGN

- Display devices positioned along the roadway network at strategic locations dedicated to transmitting dynamic traveler information messages to the motoring public regarding transportation, incident, and emergency situations (e.g., roadway conditions, accidents ahead, alternate routes, etc.)
- Typical display technologies include fiber-optic, light-emitting diode (LED), flip-disk, hybrids of the aforementioned, etc.



CVO – COMMERCIAL VEHICLE OPERATIONS

- Term used to describe the trucking industry

CVO ELECTRONIC CLEARANCE

- Concept/system that allows particular CVO vehicles the ability to by-pass roadside weigh stations and border crossings through the combination of WIM, AVI, and administrative processing
- CVO vehicles obtain the proper credentials/licenses and store the information in an on-board transponder
- CVO vehicles pass over WIMs and pass information to computer located at weigh station
- AVI system reads vehicle transponder and passes information to weigh station computer
- Weigh station computer compares real-time CVO information against motor carrier database and either allows or disallows by-pass to CVO vehicle

DFD – DATA FLOW DIAGRAM

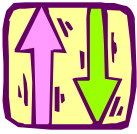
- Graphical depiction of directional data/information flows between systems, technologies, Agencies, etc.

DMS – DYNAMIC MESSAGE SIGNS

- See CMS

DOT – DEPARTMENT OF TRANSPORTATION

DPW – DEPARTMENT OF PUBLIC WORKS



EFP – ELECTRONIC FARE PAYMENT

- System of hardware and software for automatic roadside, in-vehicle, and in-station financial transactions
- Typically involve the use of passenger/driver payment cards that provide a single medium for paying travel-related fares and parking fares
- Systems can use debit, credit, and/or stored value cards and possibly include financial and card accounting systems

EMS - EMERGENCY MANAGEMENT SYSTEM

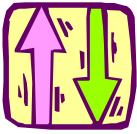
- The efficient management and use of emergency resources/equipment
- Typically involves AVL/fleet management capabilities and enhanced dispatching operations in order to provide the appropriate response in the most time-effective manner (i.e., improve/reduce response time)
- Also can involve the use of on-board dynamic route guidance systems and connections to TMCs in order to provide personnel with timely, accurate information convenient and

EMS - EMERGENCY MEDICAL SERVICES

- Fire, rescue, law enforcement, and others who are qualified to provide emergency assistance to injured victims

EMS – EXTINGUISHABLE MESSAGE SIGN

- Display devices positioned along the roadway network at strategic locations dedicated to transmitting traveler information messages to the motoring public regarding transportation, incident, and emergency situations
- EMS are different from CMS in that they do NOT provide a dynamic message but rather a dynamic indication of a static message (i.e., “Tune to AM 1610 When Flashing”, etc.)
- Typical display technologies include flashing beacons coupled with a static sign, “backlighted” static message, neon tubes, etc.)



EU – END-USER

- Term used to describe the ultimate recipient of data/information as it regards the transportation network

ENVIRONMENTAL SENSORS

- Systems that detect various weather-related and environmental conditions along the roadway network
- Typical systems/technologies include visibility monitoring (e.g., fog, snow, ice, rain, dust, etc.), pavement monitoring (e.g., temperature, water, ice, etc.), wind speed/force/direction monitoring, air quality/pollution monitoring, etc.

FREEWAY/ARTERIAL COORDINATION

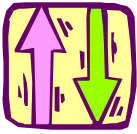
- Term used to describe the concept of synchronizing traffic signal control/operations with freeway operations (e.g., ramp meter rates, CMS messages, etc.) typically during IM situations when alternate routes are necessary

GIS – GEOGRAPHIC INFORMATION SYSTEM

- Computer software that enhances the graphic display of information based on a common geographic coordinate referencing system
- Typically involves the ability to “plot” numerous locations (e.g., facilities, roadways, devices, vehicles, etc.) on one map

GPS – GLOBAL POSITIONING SATELLITES

- System that uses a series of satellites to geographically reference an object’s location (e.g., vehicle, person, etc.) in latitudinal/longitudinal coordinates



HAR – HIGHWAY ADVISORY RADIO

- Radio broadcast system positioned along the roadway network at strategic locations dedicated to transmitting dynamic traveler information messages to the motoring public regarding transportation, incident, and emergency situations (e.g., roadway conditions, accidents ahead, alternate routes, etc.)
- Typically involve the use of dedicated AM radio frequencies/channels and have a broadcast range of ½-2 miles

HRI – HIGHWAY/RAIL INTERSECTIONS

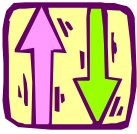
- Improved, automated systems that allow the deployment of safety-related technologies/applications that adequately warn drivers and rail operators of upcoming crossing hazards
- May eventually support real-time information on train position, train estimated-time-of-arrival at a crossing, traffic roadway conditions at a crossing, and vehicle proximity alerting systems for special vehicle classes (e.g., school buses, HAZMAT trucks, EMS vehicle, buses, etc.)

IM – INCIDENT MANAGEMENT

- Coordinated planning and use of transportation, law enforcement, and EMS resources in the effective and rapid response to incidents, (e.g., accidents, breakdowns/stalls, etc.) along the roadway network
- Involves quick identification/verification, rapid response of the proper personnel and equipment, and the facilitation of on-site management and clearance activities to reduce traveler delays
- In cases of extreme disruption to the roadway network, the use of alternate routes and freeway/arterial coordination are typically used

INTERNET

- Network of computers accessible by the public which contains a wide variety of information
- Would be used by public Agencies and ISPs to disseminate traveler information (e.g., roadway graphical map displays, roadway travel times, incident information, CCTV images, transit schedules, trip planning, etc.)



ISP – INFORMATION SERVICE PROVIDER

- Private sector entity that supplements regional multimodal traveler information with additional information (e.g., news, sports, weather, etc.) features, and services (e.g., itinerary planning, route/time/mode choice, etc.) and markets enhanced service products (e.g., pagers, in-vehicle displays, on-line access systems, etc.)
- For example → Shadow Traffic, Metro Traffic, Roadirector, SmartRoutes

ITS – INTELLIGENT TRANSPORTATION SYSTEMS

- The application of sensor, computer, electronics, and communications technologies and management strategies in an integrated manner – providing traveler information to increase the safety and efficiency of the surface transportation system

KIOSKS

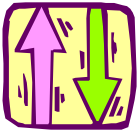
- Dedicated computer system with terminals located at strategic points (e.g., multimodal terminals, rest areas, office buildings, etc.) that allow access to multimodal traveler information
- Usually involves user-friendly graphical user interfaces (GUIs) which support an embedded menu system approach (e.g., via touchscreen, keyboard, voice-activated, etc.)
- May also just be a regular computer with Internet capabilities

MAYDAY SYSTEM

- System that supports the manual and/or automatic transmission of a distress signal (i.e. emergency assistance) to a private sector "help" center or EMS facility so that they can obtain the proper response
- Technology supports vehicle location monitoring/tracking, distress signal classification (e.g., accident, stall, etc.), and distress signal acknowledgement
- For example General Motors "On-Star" system

MEDIA

- Term used to describe radio stations, TV stations, newspapers, etc. that are responsible for broadcasting/distributing information to the public



MOU – MEMORANDUM-OF-UNDERSTANDING

- Formal agreement between organizations, (e.g., public Agencies, private sector firms, ISPs, media, CVO carriers, etc.) that outline policies, roles, responsibilities, functionality, operations, etc.

MPO – METROPOLITAN PLANNING ORGANIZATION

OFFICE OF MOTOR CARRIERS

- Federal agency that monitors and regulates the CVO industry

ON-BOARD DIAGNOSTIC SYSTEM

- On-board system that monitors vehicle performance (e.g., brake life, advanced engine status, tire status, etc.) and alerts the driver prior to a problem
- Typically used on vehicle fleets (e.g., transit, CVO, EMS, tow trucks, etc.)

PARKING FACILITIES

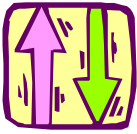
- Public Agency and/or private sector facilities (e.g., lots, garages, etc.) for the public to park their car

PAGER SYSTEMS

- Method of obtaining traveler information via hand-held device that uses alphanumeric displays
- Information could be of a general broadcast nature or tailored to the individual customer

PC – PRIMARY CONTROL

- Term used to describe the organization(s) that are responsible for the operation of a particular data source, control element, or dissemination outlet



PS – PRIMARY SHARE

- Term used to describe the organizations who should receive particular data/information as an essential component of their operations

PTMS – PORTABLE TRAFFIC MANAGEMENT SYSTEM

- System that provides transportation management for temporary situations (e.g., special events, emergencies/incidents, natural disasters, construction activities, work zones, etc.)
- Typically comprise portable CMS, CCTV, HAR, and roadway sensors

RADIO-BASED SYSTEMS

- Method of obtaining traveler information via AM/FM subcarrier frequencies
- Typically involve the use of in-vehicle devices that automatically “re-tune” the radio to a broadcasting channel and/or display traveler information in an alphanumeric manner
- Information could be of a general broadcast nature or tailored to the individual customer

RAIL ORGANIZATIONS (PRIVATE SECTOR)

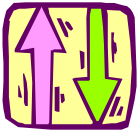
- Term used to describe private sector rail organizations such as Amtrak

RAIL ORGANIZATIONS (PUBLIC AGENCY)

- Term used to describe the Caltrans Division of Rail Operations

RAMP METERS

- System used to control the ingress of vehicles from a roadway ramp onto the mainline freeway via red-/green light indications
- Typically involves the use of roadway sensors (e.g., located along the mainline before/after ramp, on the ramp, surface street entrance to ramp, etc.) and software algorithms that balance ramp ingress volume vs. mainline capacity



RENTAL CAR COMPANY

- Term used to describe private sector companies such as Hertz, Avis, Dollar, Budget, National, etc.

ROADWAY SENSORS

- Detection devices strategically positioned along the roadway that obtain vehicle-/transportation-related information (e.g., volume, speed, occupancy, headways, etc.)
- Technologies include inductive loops, radar, microwave, acoustical sensors, video imaging detection, etc.

RTPA – REGIONAL TRANSPORTATION PLANNING ASSOCIATION

RWIS – ROADWAY WEATHER INFORMATION SYSTEM

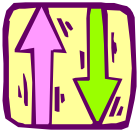
- System that combines environmental sensors with CMS and/or HAR to provide a dynamic safety warning to travelers at spot-specific locations

SC – SECONDARY CONTROL

- Term used to describe the organization(s) that are capable of assuming responsibility per MOUs for the operation of another Agency's data sources, control elements, or dissemination outlets

SS – SECONDARY SHARE

- Term used to describe the organizations who may find it valuable to receive particular data/information as a component of their operations



SECURITY MONITORING

- Use of CCTV at terminal locations and on-board transit/rail vehicles to monitor activities in order to enhance customer safety
- Use of silent alarms within a transit/rail vehicle that the driver can activate during emergency situations

SIGNAL PRIORITY

- System that allows an EMS and/or transit vehicle preferential treatment at a signalized intersection through the provision of green time extensions, phase jumps, etc.
- Typically involves the use of radio-based transmissions from the vehicle to a an intersection reader requesting the signal priority (i.e., preferential treatment)
- Software algorithms balance the request based on vehicle priority and classification, number of passengers on-board, schedule adherence delays, side-street traffic volume, etc.

“SMART” CALL BOXES

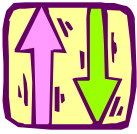
- Dedicated roadside telephones that transmit motorist distress messages to a central facility/“help” center
- In addition, these systems have the added capability to operate as a roadside processor/data collection element (e.g., CCTV images, roadway sensors, HAR messages, CMS messages, etc.)

“SMART” CARD

- Single medium for transportation-related financial transactions in the form of debit, credit, and/or stored value cards
- Used in conjunction with EFPs

SPECIAL EVENTS

- “Seasonal” event locations that generate traffic (e., motor vehicle, pedestrian, transit, etc.)
- Examples include Mid-State Fair, Pebble Beach Golf Tournament, First Night Santa Cruz, etc.



SPEED WARNING SYSTEM (CURVE/GRADE)

- System that is used to dynamically present a warning message to a motorist of the proper speed in which to safely traverse an upcoming situation (e.g., steep grade, sharp bend/curve, etc.)
- Typical components include roadway sensors, CMS, and HAR

TELEPHONE-BASED SYSTEM

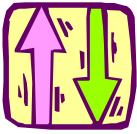
- Method of obtaining traveler information via telephone call-in system
- Typically involves a menu-based system that provides information of a general broadcast nature

TELEPHONE CALL-IN SYSTEM (*11)

- System that allows motorists/travelers to report real-time traffic conditions and incidents to the responsible Agencies
- System can also allow a motorist to receive roadway conditions data/information

TMC – TRANSPORTATION MANAGEMENT CENTER

- The purpose of a TMC is to provide a central clearinghouse facility to focus data collection, information dissemination, and operational decision-making activities in order to aggressively manage the transportation system to reduce congestion and provide for the safe and efficient movement of people, goods, services, and information in order to promote economic vitality and enhance the quality of life throughout a region
- A TMC usually provides access to other Agencies for selected elements and/or functions where informational and operational decisions for non-State highways rests with the owner/operator (e.g., County for county roadways, transit agency for transit operations, etc.)
- Typical functions included in a TMC include monitoring and control capabilities (e.g., ramp meters, CMS, HAR, CCTV, environmental sensors, etc.) coordination activities (e.g., maintenance, construction, special events, communications/dispatching, etc.), and providing a focal point to the media/ISPs for traveler information dissemination



TOURISM BOARD

- Term used to describe the public Agency and private sector organizations that promote tourism activities/attractions within their geographic region

TOWING SERVICE

- Term used to describe the private sector towing organizations that remove vehicles along the roadway network

TRAFFIC SIGNAL CONTROL

- System that can provide the ability to modify signal timings at roadway intersections through time-of-day, traffic responsive, and/or adaptive control
- System requires an accurate current picture of the traffic flow and status on the roadway network usually obtained from real-time inputs from traffic sensors (e.g., inductive loops, CCTV, etc.), incidents reports, telephone call-ins, etc.
- System can also have the ability to dynamically modify signal timings in response to changing traffic demand and coordinated operations between adjacent signal, neighboring jurisdictions, and freeway/arterial coordination

TRANSIT PROVIDERS (PRIVATE SECTOR)

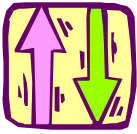
- Term used to describe private sector organizations that provide transit services
- For example → Greyhound

TRANSIT PROVIDERS (PUBLIC AGENCY)

- Term used to describe the public Agency organizations that provide regular fixed-route transit services and “dial-a-ride” operations

TRAVELERS

- Term used to describe the individuals that are using or going to use the multimodal transportation network



TRAVELER INFORMATION

- Information regarding the multimodal transportation network (e.g., freeway, arterial, transit, incidents, etc.) that provides a comprehensive and integrated view of current conditions throughout the region that individuals can use to assist their route/time/modal choices
- For example → roadway graphical map displays, roadway travel times, incident information, CCTV images, transit schedules, trip planning, etc.

VMS – VARIABLE MESSAGE SIGN

- See CMS

WIM – WEIGH-IN-MOTION

- Roadway sensors that can dynamically and accurately weigh a vehicle (typically CVO vehicle) as it travels along a roadway